

Understanding Information Age Warfare

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Richard E. Hayes, and David A. Signori
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There is no shortage of authors who offer their views of the strategic direction and shape the U.S. military will take in the 21st century. Some books capture the imagination by providing an artistic portrayal of the future military. *Understanding Information Age Warfare* is not one of them. It is academic in nature and dry in parts, delving into the nature of learning and the complex math of measuring intangibles. But it is also important, and for those who want to understand how the U.S. military is changing as it enters the new century, it is one of the better books available.

Understanding Information Age Warfare was written by David Alberts, John Garstka, Richard Hayes, and David Signori, and published by the Command and Control Research Program (CCRP). CCRP is a DOD program that focuses on command and control (C2) theory, doctrine, and practice, especially with regard to technological change. Alberts—the lead author and program director—has an ideal blend of experience with technology, Defense policy, and academia to address such complex topics. He is the lead author of many of CCRP's publications, most of which are available at <http://www.dodccrp.org/>.

The book reflects CCRP's goals as it describes the potential for technology to revolutionize U.S. warfighting capability. It begins with clear definitions and explanations of the concepts the book will explore, such as collaboration, information superiority, and synchronization. Just as the program identifies theories that can be measured and proven, the book supports its arguments—even the most basic—with experiments and exercises that demonstrate how information technology improves decisionmaking, lethality, and survivability on the battlefield.

This is exactly what separates *Understanding Information Age Warfare* from so many other publications about the same topics. Whereas many other authors

never take the time to define their terms, or rely on pure theory to support an argument for change, Alberts and his colleagues are meticulous in the academic rigor of making their case. Their devotion to detail also causes the book to lack color in parts because they define seemingly basic words such as knowledge, awareness, and understanding. For those who enjoy an in-depth discussion of the advantages and disadvantages of the observe–orient–decide–act loop as a model for complex C2, the book will prove a joy. Others may quickly lose interest.

For those whose interest holds, however, the book is well worth the invested time. Although it falls short of making revolutionary recommendations for military C2 organizations, it establishes the fundamentals of network-centric warfare and the goals for and advantages of information superiority. The authors argue that multiple, rich information technology connections throughout an operational force will have two related results. The first is that the *command intent* will saturate the C2 structure so that all involved understand the goals and objectives without a detailed, micromanaged plan. The second is that operations will be highly synchronized and mutually supporting. Ideally, the force will attain *self-synchronization* where warfighters share awareness and respond to each other's needs as they emerge, constantly adapting to the changing environment. These concepts will become increasingly important in the next decade as the next generation of weapons, information systems, and doctrine are implemented.

Not only does the book provide a vision for future warfighting, the authors also describe the way logistics will support the fast-tempo operations considered a key facet of network-centric warfare. They depict logistical systems as part of a “ring of fire,” a series of information systems that help integrate battlefield monitoring and management. Furthermore, logistical maintenance may be embedded in systems, automatically reporting location, support needs, and operational status. These concepts can have an immediate impact because they can influence investments in acquisition or research, allowing managers, for example, to identify compatibility issues prior to building a system. For those looking to give themselves a solid foundation for understanding future military operations and the role technology will play, *Understanding Information Age Warfare* is required reading.